

CLAIMS

We Claim:

1. A metadirectory system comprising:
 - a plurality of adapter peers each associated with a respective source system and each for communicating data changes regarding data of defined data types, each adapter peer communicating with other adapter peers in a peer-to-peer fashion;
 - a first join engine peer for communicating with adapter peers in the peer-to-peer fashion and for combining data from the adapter peers to generate data of defined data types and wherein the first join engine peer is also for performing data transformations regarding data from the adapter peers; and
 - a first plurality of communication channels for broadcasting data changes from the plurality of adapter peers and for broadcasting the data generated by the first join engine peer, each communication channel of the first plurality of communication channels associated with a particular data type.
2. A metadirectory system as described in Claim 1 wherein the first join engine peer is also for generating queries for data of specific data types and further comprising a second plurality of communication channels for broadcasting the queries and wherein each channel of the second plurality of communication channels is associated with a particular data type.
3. A metadirectory system as described in Claim 2 wherein adapter

peers respond to the queries by broadcasting data over one or more communication channels dedicated to responding to the queries of the first join engine peer.

4. A metadirectory system as described in Claim 2 wherein the first join engine peer generates the queries in response to a data change received from an adapter peer.

5. A metadirectory system as described in Claim 4 wherein the data generated by the first join engine peer relates to a third data type comprising a first data type and a second data type and wherein the queries are generated in response to the data change to the first data type and wherein the second data type is supplied in response to the queries.

6. A metadirectory system as described in Claim 1 wherein the plurality of adapter peers are each software processes.

7. A metadirectory system as described in Claim 6 wherein the software processes each operate on a separate server system.

8. A metadirectory system as described in Claim 6 wherein the first join engine peer is a software process.

9. A metadirectory system as described in Claim 1 wherein the data

of the defined data types generated by the first join engine peer comprises a consolidated view of data associated with two or more other data types.

10. A metadirectory system as described in Claim 1 further comprising a second join engine peer for communicating with adapter peers and the first join engine peer in the peer-to-peer fashion and for combining data from adapter peers and from the first join engine peer to generate data of defined data types and wherein the second join engine peer is also for performing data transformations.

11. A method of communicating data within a metadirectory system, the method comprising:

- a) broadcasting a data change of a first data type over a peer-to-peer communication channel dedicated to the first data type, the broadcasting performed by a first adapter peer of a plurality of adapter peers, wherein the first adapter peer is associated with a source system;
- b) listening for the data change at a second adapter peer of the plurality of adapter peers;
- c) receiving the data change at a join engine peer and in response thereto the join engine peer generating a query;
- d) in response to the query, supplying response data to the query, the response data comprising data of a second data type, the supplying performed by the second adapter peer; and

e) in response to receiving the response data, the join engine peer generating a third data type comprising the first and second data types and broadcasting the third data type over a communication channel dedicated to the third data type.

12. A method as described in Claim 11, further comprising generating queries at the join engine peer for data of specific data types and further comprising a second plurality of communication channels for broadcasting the queries and wherein each channel of the second plurality of communication channels is associated with a particular data type.

13. A method as described in Claim 12, further comprising broadcasting data, at the second adapter peer, over a communication channel dedicated to responding to the query of the join engine peer.

14. A method as described in Claim 12, further comprising generating, at the join engine peer, the query in response to a data change received from the first adapter peer.

15. A method as described in Claim 14, wherein the plurality of adapter peers are each software processes.

16. A method as described in Claim 15, wherein the software processes each operate on a separate server system.

17. A method as described in Claim 15, wherein the join engine peer is a software process.

18. A method as described in Claim 11, wherein the third data type comprises a composite view of the first and second data types.

19. A method as described in Claim 11, wherein the join engine peer is a first join engine peer and the method further comprising communicating between a second join engine peer with one or more of the plurality of adapter peers and with the first join engine peer in a peer-to-peer fashion for combining data from adapter peers and from the first join engine to generate data of defined data types and wherein the second join engine peer is also for performing data transformations.

20. A computer-readable medium having computer-readable program code embodied therein for causing a computer system to perform a method of communicating data within a metadirectory system, the method comprising:

- a) broadcasting a data change of a first data type over a peer-to-peer communication channel dedicated to the first data type, the broadcasting performed by a first adapter peer of a plurality of adapter peers, wherein the first adapter peer is associated with a source system;
- b) listening for the data change at a second adapter peer of the plurality of adapter peers;

- c) receiving the data change at a join engine peer and in response thereto the join engine peer generating a query;
- d) in response to the query, supplying response data to the query, the response data comprising data of a second data type, the supplying performed by the second adapter peer; and
- e) in response to receiving the response data, the join engine peer generating a third data type comprising the first and second data types and broadcasting the third data type over a communication channel dedicated to the third data type.

21. A computer-readable medium as described in Claim 20, further comprising generating queries at the join engine peer for data of specific data types and further comprising a second plurality of communication channels for broadcasting the queries and wherein each channel of the second plurality of communication channels is associated with a particular data type.

22. A computer-readable medium as described in Claim 21, further comprising broadcasting data, at the second adapter peer, over a communication channel dedicated to responding to the query of the join engine peer.

23. A computer-readable medium as described in Claim 21, further comprising generating, at the join engine peer, the query in response to a data change received from the first adapter peer.

24. A computer-readable medium as described in Claim 23, wherein the plurality of adapter peers are each software processes.

25. A computer-readable medium as described in Claim 24, wherein the software processes each operate on a separate server system.

26. A computer-readable medium as described in Claim 24, wherein the join engine peer is a software process.

27. A computer-readable medium as described in Claim 20, wherein the third data type comprises a composite view of the first and second data types.

28. A computer-readable medium as described in Claim 20, wherein the join engine peer is a first join engine peer and the method further comprising communicating between a second join engine peer with one or more of the plurality of adapter peers and with the first join engine peer in a peer-to-peer fashion for combining data from adapter peers and from the first join engine to generate data of defined data types and wherein the second join engine peer is also for performing data transformations.

29. An automated method of synchronizing information in an enterprise information system comprising:

performing peer-to-peer broadcasting of information from a first source

system peer of the enterprise information system, the information associated with a first data type that is maintained by the first source system;

listening for and receiving the broadcasted information associated with the first data type; and

synchronizing at a second source system peer of the enterprise information system the information associated with the first data type with information associated with a second data type that is maintained by the second source system.

30. A method as described in Claim 29, wherein the listening for and receiving comprises listening for and receiving at the second source system that maintains the second data type.

31. A method as described in Claim 29, wherein:

the broadcasting comprises broadcasting the information on a channel that is dedicated to providing the information associated with the first data type; and

the listening for and receiving comprises listening for and receiving the information on the channel that is dedicated to providing the information associated with the first data type.

32. A method as described in Claim 29, wherein the broadcasting is performed in response to the information associated with first data type being modified and the synchronizing comprises synchronizing the modified

information associated with the first data type with the information associated with the second data type.

33. The method as described in Claim 29, wherein the listening for and receiving further comprises listening for and receiving at a join engine peer the information associated with the first data type and wherein the method further comprises:

determining, at the join engine, whether the first data type is related to the second data type;

if the first data type is related to the second data type, then

broadcasting from the join engine the information associated with the first data type;

listening for and receiving at the second source system the information associated with the first data type; and

synchronizing the information associated with the first data type with the information associated with the second data type.

34. A method as described in Claim 33, wherein:

the determining whether the first data type is related to the second data type comprises determining whether the second data type is a consolidation of the information associated with the first data type and information associated with a third data type; and

the causing the synchronization comprises consolidating the information of the first data type and the third data type.

35. A method as described in Claim 33, further comprising:
- broadcasting from the join engine a request for information associated with a third data type on a channel that is dedicated to requesting the information associated with the third data type, wherein the response is broadcast by the third source system on a channel that is dedicated to providing the information associated with the third data type in response to the request; and
- the receiving comprises receiving the information associated with the third data type on the channel that is dedicated to providing the information associated with the third data type.
36. A method as described in Claim 35, wherein the request for the information associated with the third data type includes a query for obtaining the information associated with the third data type from the third source system and the method further comprises:
- receiving at the third source system the request that includes the query;
- executing the query at the third source system to obtain the information associated with the third data type; and
- broadcasting the information associated with the third data type on the channel that is dedicated to providing the information associated with the third data type.